

28. (Currently Amended) The system of claim 27 wherein the one or more client systems is coupled to the broadcast server through a network.

*Payton*  
29. (Original) The system of claim 27 wherein the one or more client systems is coupled to the broadcast server through a radio transmission through the atmosphere.

30. (Original) The system of claim 27 wherein communications between the one or more client systems and the broadcast server are uni-directional.

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#### REMARKS

This Amendment is in response to the Office Action dated March 27, 2003. In the Office Action, the Examiner rejected claims 1, 6-11, 14-15 and 18-30 under 35 U.S.C. § 102(b) as being anticipated by Payton, U.S. Patent No. 5,790,935 (hereinafter *Payton*). Claims 2-5, 12, 13, 16, and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Payton* in view of Payne *et al.*, U.S. Patent No. 6,021,433 (hereinafter *Payne*). .

Claims 1-3, 7, 9, 11-13, 15-17, 19, 23, and 26-28 are amended, as shown above. Specifically, independent claims 1, 7, 11, 15, 19, 23, and 27 are amended to more clearly recite features of the claimed invention. Claims 8, 20, and 24 are canceled herein without prejudice. Claims 1-7, 9-19, 21-23, and 25-30 are now pending in the application. For the reasons set forth below, the Applicants respectfully request reconsideration and allowance of all pending claims.

#### Argument in Support of Allowance of the Amended Independent Claims

Independent claims 1, 7, 11, 15, 19, 23, and 27 are amended herein to more clearly recite features of the claimed invention. However, the following argument in

support of the allowance of the independent claims are made in view of the aforementioned claim rejections presented in the March 17, 2003 office action, with the realization that none of the amended claims currently stand rejected by definition.

In general, the present invention concerns a broadcast system, method and apparatus for providing content on demand. In one embodiment, the broadcast system includes a server that broadcasts meta-data to a plurality of clients. The meta-data describes a plurality of data files (i.e., content) that are to be broadcast or potentially broadcast later by the server by identifying attributes of each data file. Each client receives the broadcasted meta-data from the server and updates and maintains a local meta-data table and a content rating table. Based on the attributes in the meta-data in combination with attribute rating data derived from previous access habits of the user (of a client system) and optional user classifications, the client system selectively receives and/or stores data files that are later broadcast by the server.

In general, claims 1, 11, and 15 pertain to client-side operations of the broadcast system, while claims 7, 19, and 23 cover server-side operations. Claim 27 concerns the entire system.

With respect to amended independent claim 1, this claim now recites:

1. A method, comprising:

receiving meta-data broadcast by a server system at a client system, the meta-data including attributes describing the content of respective data files from among a plurality of data files to be broadcast later by the server system;

***generating ratings for each of the plurality of data files via the client system based on existing attribute rating data stored by the client system and common attributes contained in the meta-data for that data file;***

***selecting, via the client system one or more of the plurality of data files described by the meta-data to store based on the ratings generated for the plurality of data files; and***

selectively storing, via the client system, the selected one or more of the plurality of data files in response to a later broadcast of those data files by the server system.  
(Emphasis added).

Applicants respectfully assert that amended claim 1 is patentable over the art of record. In particular, the operations recited in each of the bold italicized subparagraphs are not taught or suggested in the cited art, either independently or in combination. For example, under amended claim 1, the claimed invention generates ratings for each of the data files and selects data files to store at the client. In contrast, Payton generates a list 44 of recommended items for each subscriber via a collaborative filter system 42 operating on a central distribution server 24, as shown in Figure 2, and generally discussed in col. 5, lines 6-20. Furthermore, the list of recommended items is synthesized from subscriber profiles 40, which include rating vectors (shown in Figure 6) in which the subscriber has rated each of the items he or she has previously requested.

It is clear from above that ratings for the data files, which have yet to be broadcast) are not generated at the client system under Payton. Nor is such as scheme suggested by Payton, and is, in fact, taught away by Payton. As discussed in the background and summary of the invention sections, Payton's system is targeted toward delivering "virtual" on demand digital information in a manner that maximizes network bandwidth over an extended period by performing a bulk of the broadcasting during off-peak hours. This is facilitated by "predicting" what content (e.g., programming, movies, etc.) each subscriber may desire to view, and storing that content on each subscribers local server, wherein the content is broadcast throughout

the day (especially including the off-peak hours). The predicted content is aggregated across all users at the central distribution server to determine when and what content should be broadcasted. Ideally, content each subscriber would like to view will be stored on the local server during non-peak periods, leaving any unmet subscriber demands for content that isn't already on their respective local servers to be met via on-demand requests made during the peak periods. This is summarized in the following paragraph:

By predicting which items each subscriber is likely to request, storing them locally, and then recommending those items to the subscriber, the system reduces the number of subscriber requests that must be provided on-demand from the central distribution server. This offloading of required bandwidth from the central distribution server to the local servers allows the existing transport systems, as well as the next generation systems, to support virtual on-demand service. (Col. 3, lines 33-42).

The objective of such a system is to provide the best overall prediction of subscriber demand, rather than providing the best prediction on an individual subscriber basis. In fact, the individual subscriber demand predictions can be far from perfect, since it is expected that a certain amount of non-predicted content (i.e., content that is not stored on a subscribers local server) will be requested during peak hours for on-demand viewing. In fact, the demand predictions are determined based on similarity groups to which each subscriber is assigned, rather than individual subscribers (see col. 8, lines 59-68 and col. 9, lines 1-60, generally). More particularly, Payton states,

The performance of these collaborative filtering systems improves as the number of subscribers increases relative to the number of available items. The chance of finding several subscribers who have similar tastes as any particular subscriber increases as the number of subscribers increases. Furthermore, the prediction accuracy will increase as the total number of selections rated by each subscriber increases. To improve start up performance, each subscriber should rate a common selection of items to place him or her among other subscribers with roughly similar tastes. As the subscriber requests and rates items, the subscriber's profile will more accurately reflect his or her preferences and will track changes in those preferences.

In contrast, under the present invention, it is desired to accurately predict view content demand on an individual user basis. This is why the ratings of the data files (to be broadcast) for each client system (used by one or more users) are determined based on attribute ratings data already stored on that client system, which in turn is indicative of content desired by its user(s), with no consideration of the ratings stored on other clients systems.

It is clear that the elements of the bold italicized subparagraphs of amended claim 1 above are not taught or suggested by Payton. Furthermore, the application respectfully asserts that these elements are not taught or suggested by any of the art of record, or known to the applicant, either alone or in combination. Accordingly, amended claim 1 is in condition for allowance, as well as each of claims 2-6, which are dependent thereon.

Amended independent claims 11 and 15 respectfully recite an apparatus and machine instructions for performing the method of amended claim 1. Accordingly, each of claims 11 and 15 are now in condition for allowance for similar reasons presented above in support of the allowance of claim 1.

Claims 7, 19, and 23 respectfully recite a method, apparatus and machine instructions corresponding to server-side operations of the broadcast system. In addition, each of claims 7, 19, and 23 now include a further limitation previously contained in respective claims 8, 20, and 24 (as originally filed). In particular, the operations in each of these claims substantially include:

broadcasting meta-data to one or more client systems, ***the meta-data including attribute data describing the content of respective data files*** from among a plurality of data files to be broadcast later by the server system; and

***broadcasting a meta-data broadcast schedule*** prior to broadcasting the meta-data, the meta-data broadcast schedule to indicate a time when the meta-data is to be subsequently broadcast.

The Applicant respectfully asserts that the cited art does not teach or suggest, alone or in combination, the elements of broadcasting meta data including ***attribute data describing the content of respective data files***, and ***broadcasting a meta-data broadcast schedule***. Furthermore, the cited art does not teach or suggest broadcasting a schedule of when the meta data are broadcast.

With respect to the rejection of originally-filed claims 8, 20, and 24, the Examiner states, "Payton teaches the invention comprising broadcasting a meta-data broadcast schedule prior to broadcasting the meta-data, the meta data broadcast schedule to indicate a time when the meta-data is to be broadcast later [Col. 4, lines 23-44 and Col. 5, lines 22-67]." The applicant respectfully disagrees with this statement in respect to both the meta-data and the meta-data broadcast schedule.

The first cited portion of text (Col. 4, lines 23-44) discusses Payton's broadcasting system in general. The second cited portion of text (Col. 5, lines 22-67) discusses how digital "items" 36 (i.e., the content that is broadcast, such as movies, software, games, music, etc.) are scheduled for broadcasting, and how those items are delivered. The first paragraph of these three paragraphs states:

A scheduling processor 46 merges **the lists 44 of recommended items to prioritize the items 36 from the most to the least frequently recommended and places *identifiers for these items in a refresh queue 47* for broadcast over the digital transport system 26. When the recommended items reach the top of the refresh queue 47, they are retrieved from repository 34 and are broadcast to the local users,** preferably during off-peak viewing hours so that all of the system's bandwidth is available to service on-demand requests during on-peak hours. In response to a subscriber's on-demand request that cannot be served by that subscriber's local server 28, the scheduling processor 46 merges requests for that item and places it in an on-demand 49 queue. Items broadcast in response to subscriber requests take priority over the broadcast of the recommended items. As a result, the subscribers' on-demand requests are served either from their local server or from the central distribution server 24 virtually on-demand . . . (Emphasis added)

The central distribution server 24 broadcasts two things: the digital items 36 and the lists 44 of broadcast item recommended for each subscriber. In some instances,

the lists 44 are sent to the subscribers via back channel 30 rather than broadcasting them (see Col. 6, lines 51-59). The identifiers for the items that are broadcast are not broadcast themselves, but rather are placeholders identifying which items are to be broadcast in what order, based on available bandwidth for digital transport system 26. At no point in time does the central distribution server broadcast meta-data including attribute data describing the content of respective data files (digital items) to be broadcast. Furthermore, there is no broadcasting of a schedule identifying when such a meta-data broadcast is to occur.

It is thus clear that Payton does not teach or suggest all of the elements recited in each of amended independent claims 7, 19, and 23. Accordingly, each of these claims is patentable of Payton. Additionally, each of the claims dependent on independent claims 7, 19, and 23 are in condition for allowance for at least the same reasons.

Independent claim 27 concerns a broadcast system corresponding to an embodiment of the present invention, including both server-side and client-side operations. By definition, if either of the server-side or client-side operations are patentable by themselves, then the combination of these operations with the operations of the other system components are patentable for at least the same reasons, since the latter adds further limitations to the patentable subject matter. Accordingly, the applicant respectfully asserts that amended independent claim 27 is patentable over the cited art for at least the same reasons as those discussed above with respect to the independent claims covering the server-side and client-side operations.

Conclusion

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claims. Thus, given the above amendments and accompanying remarks, independent claims 1, 7, 11, 15, 19, 23, and 27 are now in condition for allowance. The dependent claims that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

*Charge Deposit Account*

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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